

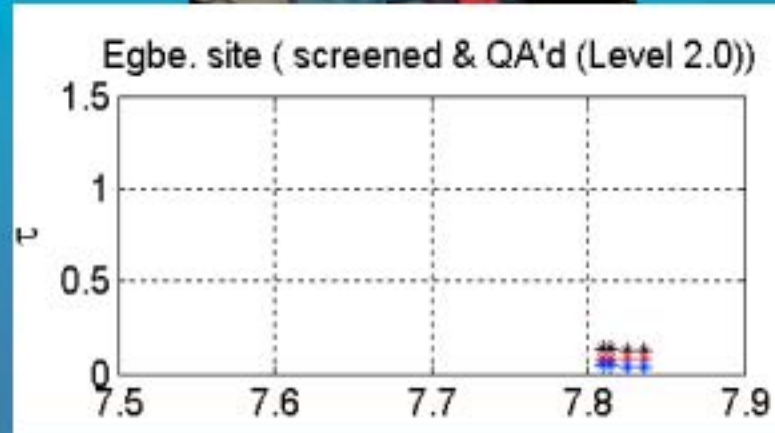
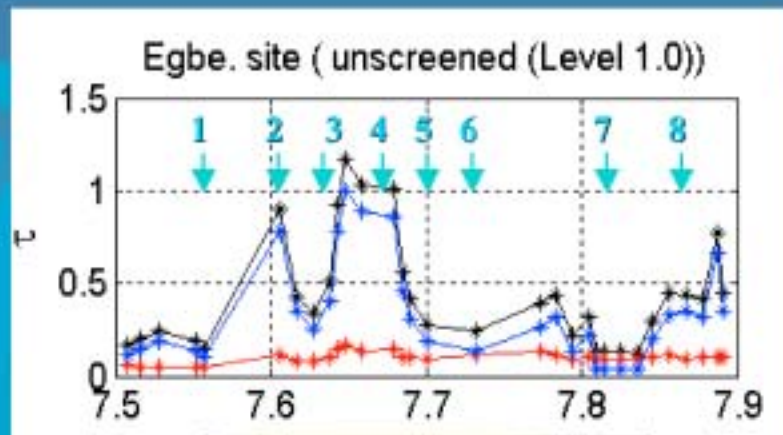
# New Observational Directions

- SeaPRISM-Ocean Color
- Cloud Optical Depth-Alexander Marshak
- BRDF-New improved protocol
- Multi spectral polarimeter
- CO<sub>2</sub> radiometer

# Campaigns

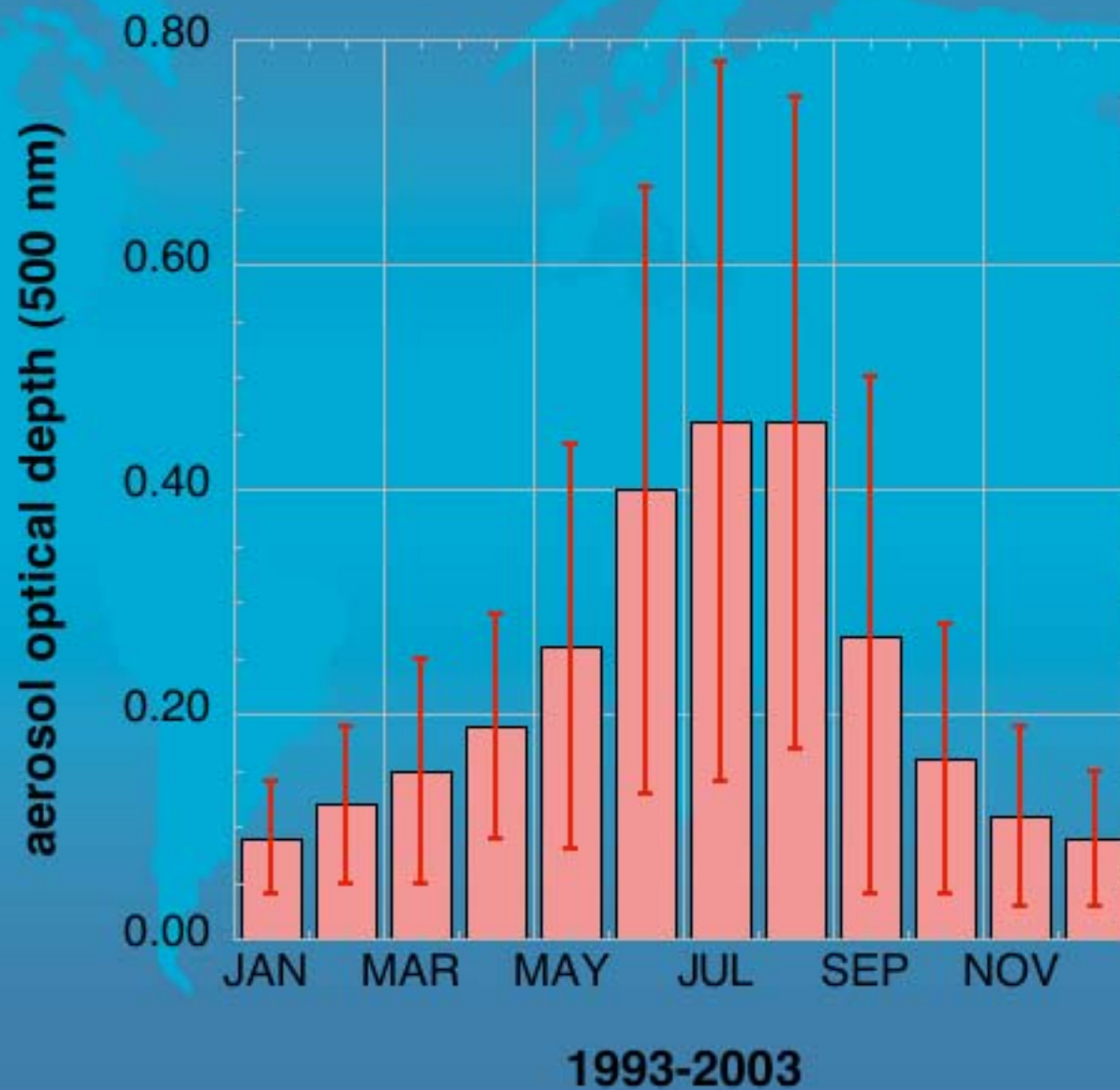
- Passive participation supporting NASA campaigns (NENA, MODIS, MISR, GLAS)
- Active participation but unfunded (ACE-Asia, SAFARI2000, SE Asia, AMAS)
- Active and Funded Participation (BOREAS, LBA-ECO)

# $\tau_f / \tau_c$ discrimination from spectral curvature

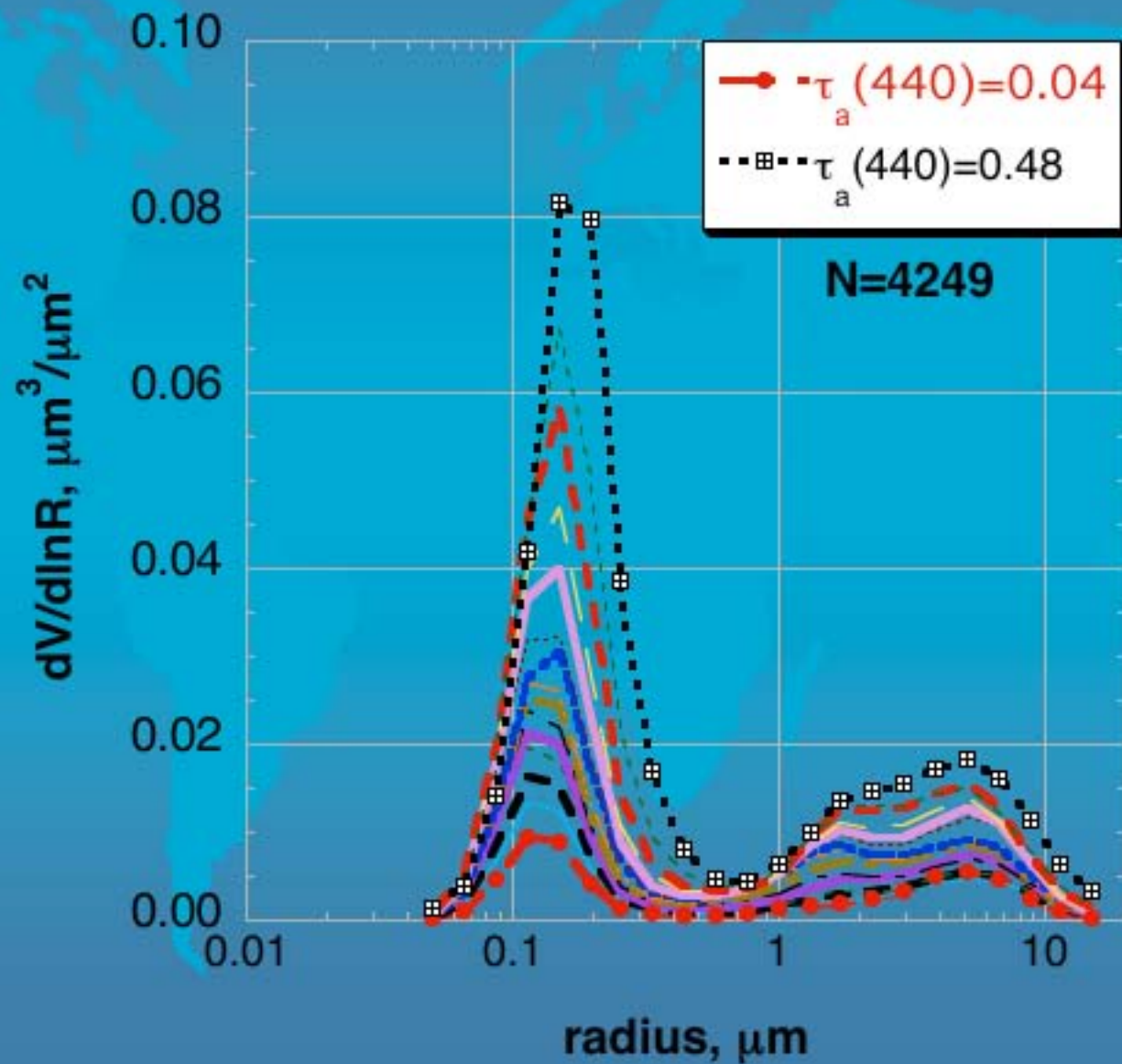




# Goddard Space Flight Center

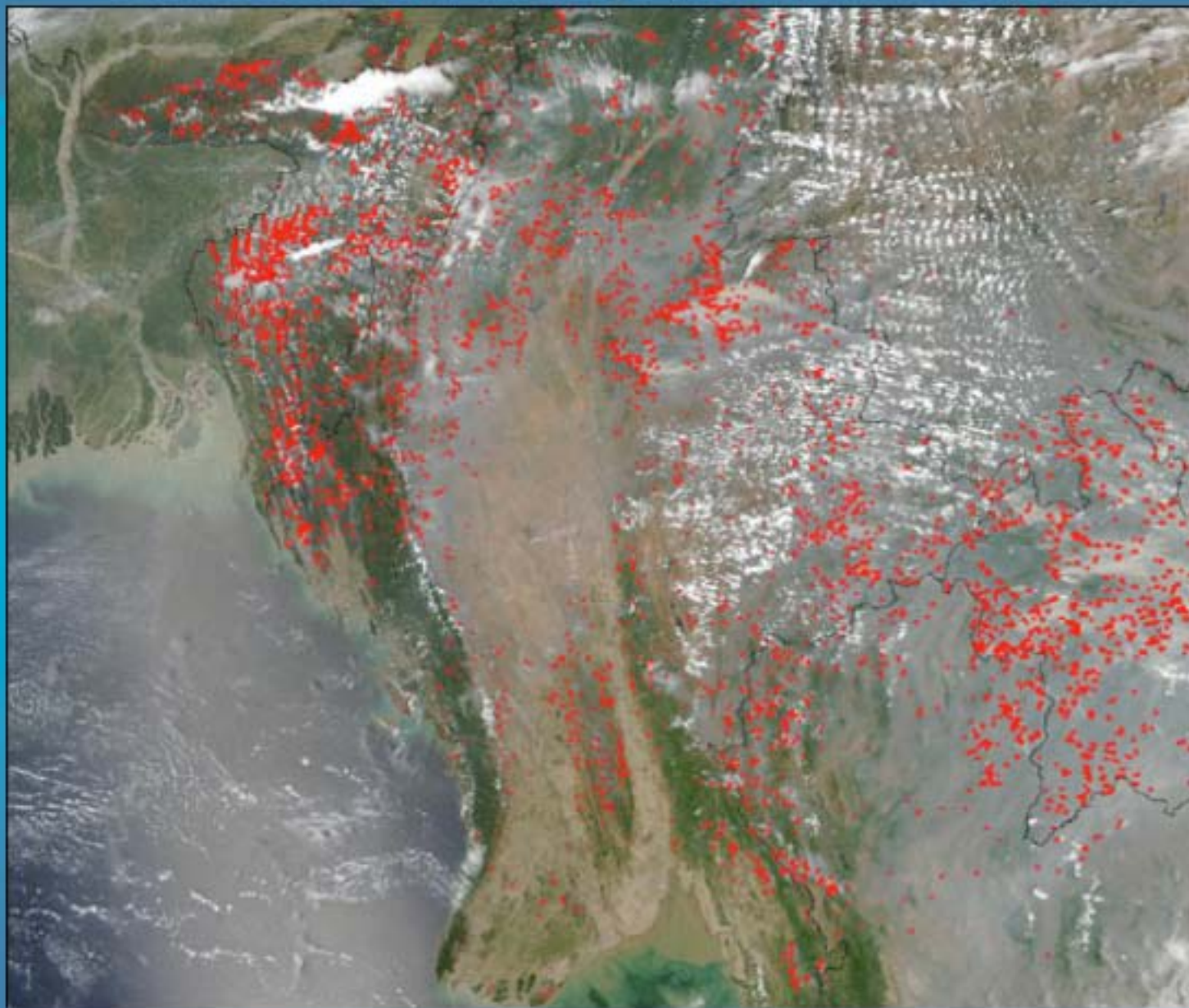


# Goddard Space Flight Center

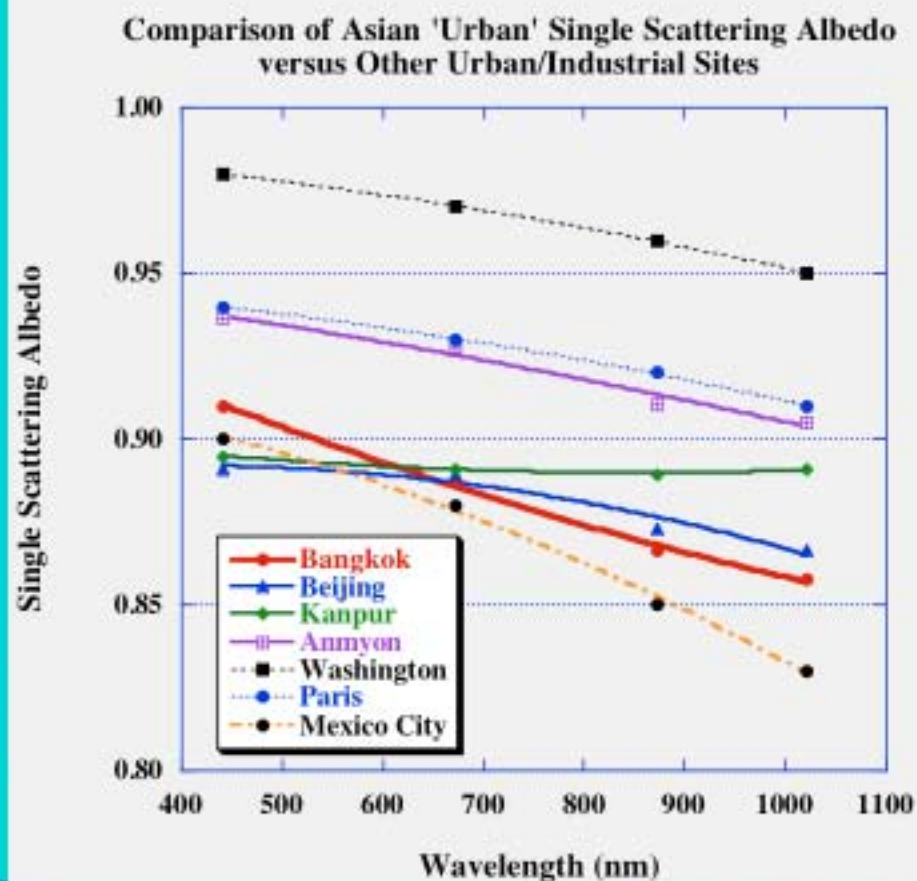
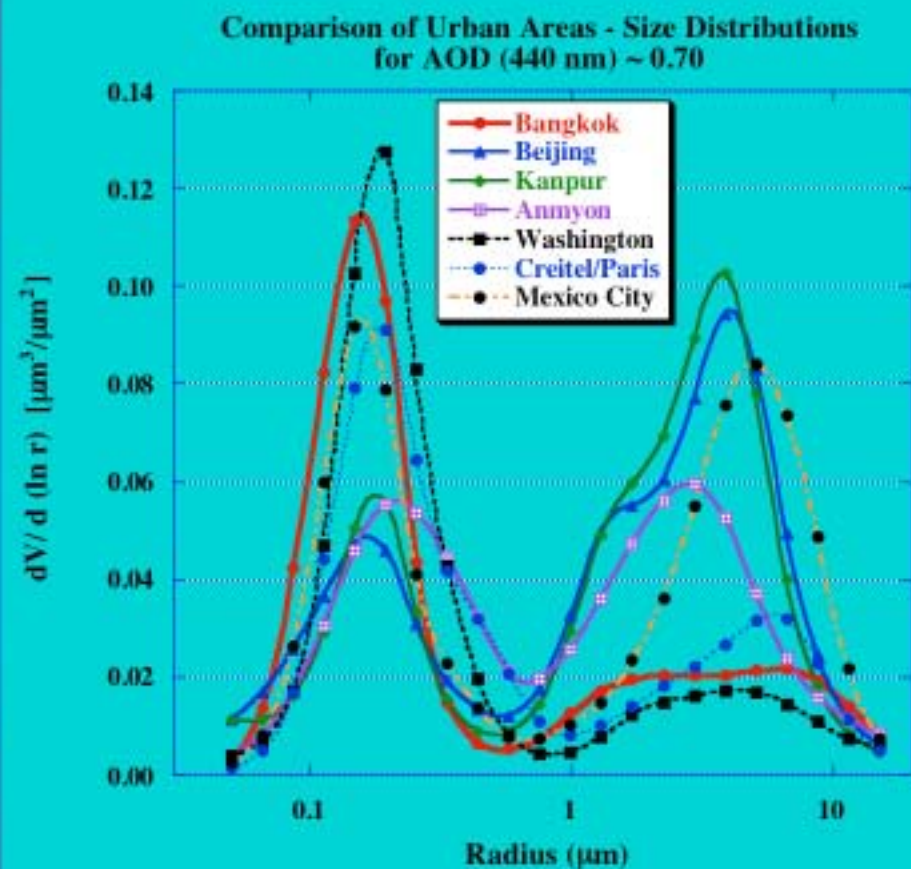


April 8, 2003 - Numerous fires in India, Burma, and Laos and NW Thailand -

Om Koi:  $AOD(500nm)=0.45$  at Aqua (MODIS) Satellite Overpass time

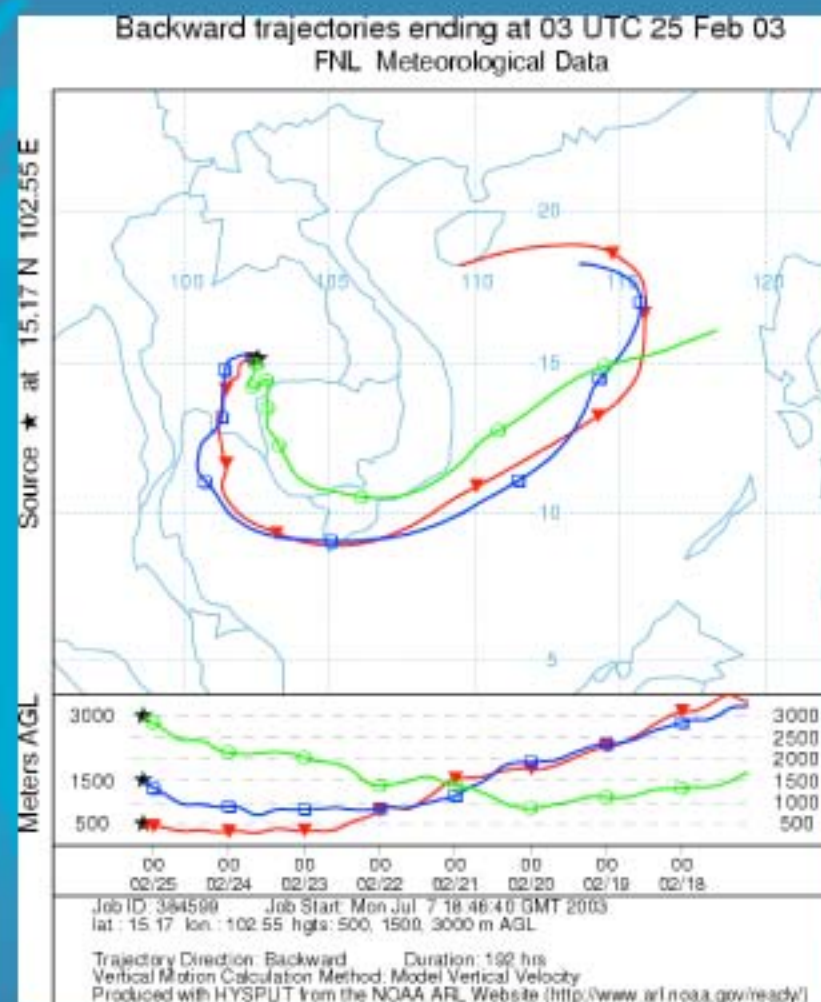
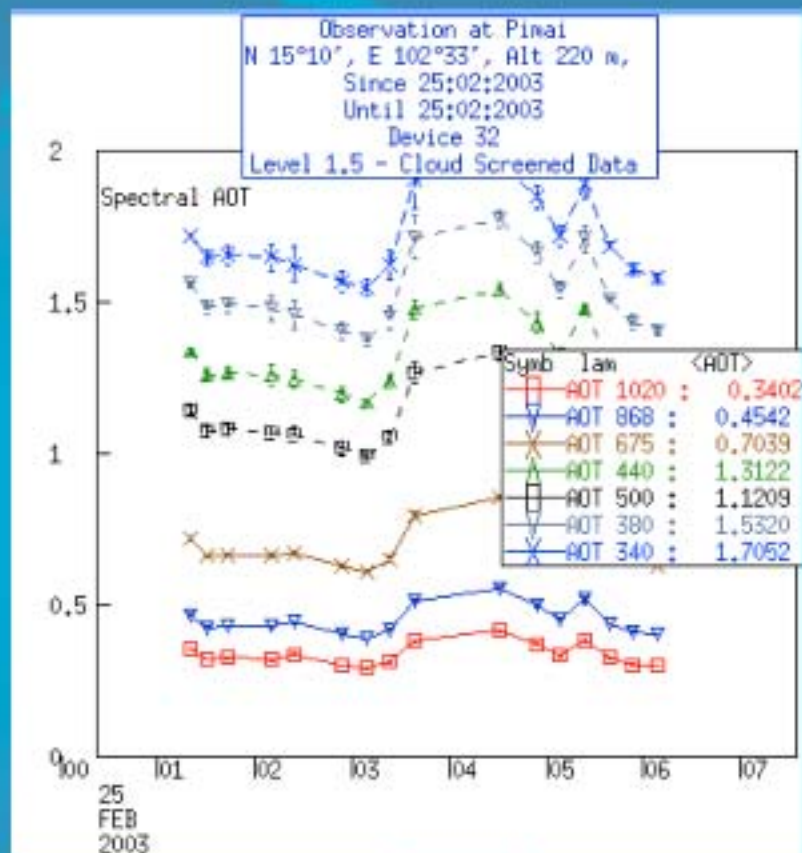






Washington, Paris, and Mexico City data from *Dubovik et al. [2002] Table 1.*

**February 25, 2003 - High AOD (1.12 at 500 nm) at Phimai ; 8-Day Back Trajectory suggests transport of both pollution from industrial area SE of Bangkok and possibly also smoke and pollution from SW Cambodia and Viet Nam**

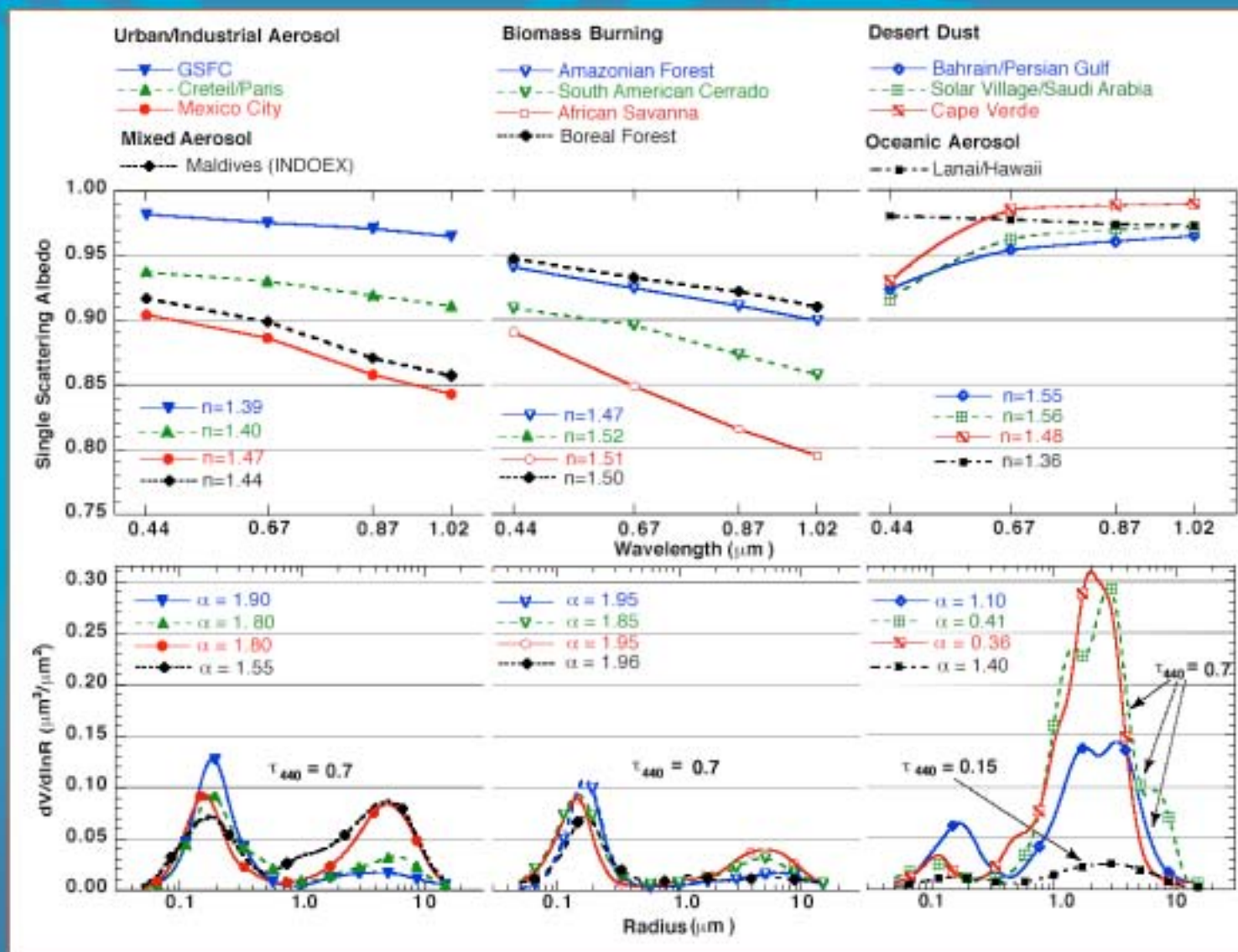




## *SUMMARY AND CONCLUSIONS*

- Preliminary data suggest that during the 2nd half of the dry season the aerosol is quite strongly absorbing in both urban and rural sites in SE Asia ( $\omega_{0550} \sim 0.895 - 0.915$ )
- Aerosol size distributions are dominated by fine mode particles (radius  $< 0.6$  micron) with very consistent size of fine particles at all sites ( $r_v \sim 0.15 - 0.16 \mu\text{m}$  at  $\tau_{a440} = 0.7$ )
- Preliminary data from Phimai suggest a dynamic aerosol model with particle size increasing as optical depth increases, and  $\omega_0$  also increasing as optical depth increases
- Continuing monitoring in the beginning of the dry season will characterize the regional aerosol before biomass burning aerosols are added to the mixture

# The averaged optical properties of various aerosol types





# Maritime aerosol



Marcello Bartinetti  
“Sea storm in Camogli”



Duck, North Carolina, March 1999



# Proposed Additional Data

- Modis
  - AOD retrievals (MODLAND, MOVAS)
  - Surface Reflectance (MODLAND, MOVAS)
  - Clouds-Cirrus (MOVAS)
  - Radiances-Level 1b
- MISR-AOD
- GLAS-Extinction profile
- CERES-TOA flux
- TOMS-AOD, AI
- ATRAIN-????
- POLDER-AOD
- BSRN-Surface Flux
- New Products-Direct radiative forcing (CERES, AERONET & BSRN)

# New Developments from the AERONET Program

- New Extended wavelength instrument supported
- Ancillary data sets added to AERONET website (BT, MPL with sat imagery and GOCART)
- Download Tool - Inversions QA'd, 'Recommended'
- Spheroid model inversions supported
- AEROSOL climatology supported for AOD
- Network open for expansion into Asia, oceans, high latitudes, Africa
- Plans for inversion product climatology
- Plans for improved precipitable water retrievals
- Plans for distributed calibration centers
- SeaPRISM and BRDF instruments supported

A faint, light blue world map is visible in the background of the slide, centered behind the text.

## Points of Success

- Core funding
- Scientific research component
- Centralization of operations



# Acknowledgments

- **We thank Dr. Diane Wickland for the critical, initial and continuing support of this lifeform**